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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,784	11/02/2001	Kevin A. Marshall	SUN1P749/P5575NP	3211

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EXAMINER	
KENDALL, CHUCK O	
ART UNIT	PAPER NUMBER
2192	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/052,784	MARSHALL, KEVIN A.	
	Examiner	Art Unit	
	Chuck O. Kendall	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 – 2,4 – 5, 7 – 14 and 16 – 24* is/are pending in the application.

4a) Of the above claim(s) *3,6 and 15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 – 2,4 – 5, 7 – 14 and 16 – 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Amendments filed on October 24, 2006. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Claims 1 – 2, 4 – 5, 7 – 14 and 16 – 24 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1 and 22 – 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Arbouzov USPN 5,701,487.

Regarding claim 1, Arbouzov teaches a method (8:40 – 9:50), apparatus (9:50-10:62) comprising a processor a memory, and a computer-readable medium storing instructions for automatically generating data regarding errors in a software system, the software system including one or more software components the method comprising:

obtaining/examining contents of one or more files indicating one or more errors in the software system to determine one or more of the software components prone to or responsible for the errors (2:15 - 25) and a number of the errors, attributed to each of the software components determined to be responsible for the errors (see 2:1 – 5 and 2:18 – 23); and

determining a size of the one or more software components responsible for the errors (5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees); and said errors being errors generated during execution of the software system (6:10 – 15, see executing software instructions).

Regarding claim 2 recites a computer-readable medium version of the method addressed in claim 1, therefore, is rejected for the same reasons as cited in claim 1.

Regarding claims 23 and 24 recite an apparatus version of the method addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 or this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 3, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov USPN 5,701,487 as applied in claim 1 in view of Chung et al. (US 6745348).

Claim 2

The rejection of base claim 1 is incorporated. Arbouzov further teach correlating the size of the determined software components with the number of errors attributed to the determined software components (5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees). Arbouzov doesn't explicitly disclose enabling data indicating a probability of errors occurring during execution of a set of software components to be generated from the determined size of the software components determined to be responsible for the errors and the number of the errors attributed to each of the software components determined to be responsible for the errors.

However, Chung does disclose in an analogous art and similar configuration estimating and identifying the number of faults and calculating based on counts of lines scanned for the faults, (see FIG.2 & all associated text, 201-205). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbouzov and Chung because it would enable predicting errors in the code.

Claims 3, 16

Claims 3 and 16 recite limitations which have been addressed in claims 1, 2, therefore, are rejected for the same reasons as cited in claims 1, 2.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov USPN 5,701,487 as applied in claim 1 in view of Chung et al. (US 6745348) and further in view of Ruhlen et al. (US 6665824), hereinafter, Ruhlen et al.

Claim 4

The rejection of base claim 1 is incorporated. Arbouzov and Chung et al. does not expressly disclose the contents of one or more files examined further indicating one or more source code modifications made in response to the errors.

However, Ruhlen et al. disclose a method for tracking/counting errors which occur during the execution of the software components (e.g., col.1:15-18, col.1:23-28, see failure reporting executable 230 FIG.2 & associated text) in a software system including one or more software components (e.g., co1.4:10-13), storing the modifications (i.e., source code changes) made in response to the errors (e.g., co1.3:63-67),in a file (e.g., see repository 235 FIG.2 & associated text, col.2:11-13). Arbouzov and Chung et al. (hereinafter AC) and Ruhlen et al. are analogous art since they are both directed to tracking and counting the number of errors occurred in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Ruhlen et al. into that of AC to include tracking and storing modifications made in response to the errors. And

the motivation for doing so would have been to minimize the time and cost of error query processing as conventionally performed by a computer program, thus improving the technique for locating of errors in a software system and improve the handling of error queries and technical support in an environment where the software system is distributed and used by a large number of clients (e.g., see motivation suggested by Ruhlen et al. col.1: 29 – 36; col.1:43-65).

Claim 5

The rejection of base claim 4 is incorporated. Ruhlen et al. further teaches wherein determining from the one or more files one or more of the software components responsible for the errors comprises: determining from the source code modifications/changes (e.g., see application version number, module version number col. 6:65 - col.7: 3, see "10.0.2310.1 ", "10.0.2312.1" co1.7:10 - 25) one or more software components modified (e.g., see application program name, module name col.6:66-col.7:3, see "Winword.exe", "mso.dll" co1.7:10-25) to correct the errors (e.g., see failing instruction's instruction pointer col.6:66-col.7:3, see "Obcd1234" co1.7:10-25). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made combine the teachings and the motivation for doing so would have been that which has been as applied to claim 4.

5. Claims 7-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov USPN 5,701,487 as applied in claim 1 in view of Chung et al. (US 6745348) in view of Ruhlen et al, further in view of Leung (US 6769114), hereinafter, Leung.

Claim 7

The rejection of base claim 1 is incorporated. Arbouzov as modified by Chung and Ruhlen doesn't teach wherein examining contents of one or more files indicating one or more errors in the software system comprises generating a list of one or more errors corresponding to source code changes (see claim 4). The combined teaching (Arbouzov, Chung & Ruhlen et at), hereinafter referred to as ACR, does not expressly disclose generating a list of one or more files associated with successful attempts to correct the errors. However, Leung discloses a method (e.g., see Abstract) of tracking/associating errors (e.g., col.6:25-41) with modifications (i.e., versions, files, source code changes) (e.g., see software modifications col.3:25-29, see second version co1.9:20-23, col.12:58-61) and associating modifications with successful attempts (e.g., see previous passed integration tests col.3:25-29, co1.9:20-23) to correct the errors (e.g., col.1:19-23, see interface error col.9:27 28, see sequence error col.9:31-32, col.12:62-64, col.11:1-6). ACR and Leung are analogous art since they're both directed at tracking errors in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of ACR with that of Leung to include the associating of modifications with successful attempts to

correct the errors. And the motivation for doing so would have been to monitor the modifications of software components and prevent them from invalidating previous tested and passed versions (i.e., successful attempts to correct errors/defects) of the software components (see motivation suggested by Leung Abstract; col.1: 24-50; col.6:42-46; col.6:65-col.7:5; col.10:13-20; col.14:42-47; col.15:19-30).

Claims 8-9 and 13-14

Claims recite limitations which have been addressed in claims 4 and 7, therefore, are rejected for the same reasons as cited in claims 4 and 7.

6. Claims 10-12, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov in view of Chung et al. in view of Ruhlen et al. further in view Hanson (US 5946493), hereinafter Hanson.

Claim 10

The rejection of base claim 1 is incorporated. Arbouzov as modified with Chung and Ruhlen teach wherein determining a size of the one or more software components responsible for the errors comprises determining a section of code modified (.e., modifications, versions) to fix an error (see claim 5). The combination of Arbouzov, Chung and Ruhlend does not expressly disclose determining start and end lines of a section of code. However, Hanson discloses a method (e.g., see Abstract) for

determining the start (e.g., see first line 112 FIG.3A & associated text) and end lines (e.g., see last annotated line 116 FIG.3A & associated text) of a section of code (e.g., see FIG.2A, 213, 2D & associated text), matching one or more line numbers associated with source code against compiled information (e.g., see 101 FIG.3A & associated text) associated with the source code (e.g., see 106 FIG.3A & associated text, col.1:32-36, col.1:53-58), converting the start (e.g., see (JOJ FIG.2A & associated text) and end lines (e.g., see j12J FIG.2A & associated text) of a section of source code to the start (e.g., see 28 FIG.2B & associated text) and end lines of a current version (e.g., see 40 FIG.2 B & associated text, see object code col.1:32-36) of a file (e.g., see 108 FIG.3A & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of

Arbouzov as modified with that of Hanson to include determining the start and end lines for a section of code modified to fix an error, matching line numbers associated with the modified source code against compiled information associated with the source code and converting the start and end lines of a section of code to the start and end lines of a current version of a file. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abrouzov, Chung and Rulen with Hanson because it would have enabled generating a listing associating/mapping the object code (compiled) instructions with the source code instructions which can be used to debug the program, investigate performance problems, and improve the analysis of the quality of the compiled object code (see motivation suggested by Hanson col.1: 42-60).

Claims 11-12, 17-19, 21

Claims recite limitations which have been addressed in claims 5 and 10, therefore, are rejected for the same reasons as cited in claims 5 and 10.

Claim 20

The rejection of base claim 18 is incorporated. Hanson further teaches comparing information associated with a source code to determine one or more line numbers associated with the modified source code (e.g., see 108 FIG.3A 8 associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to combine the teachings of Hanson and Arbouzov as modified and the motivation for doing so would have been that which has been applied to claim 10.

Response to Arguments

7. Applicant's arguments with respect to claims 1 – 2,4 – 5, 7 – 14 and 16 – 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may b e obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.